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REMARKS

It is first noted that in this Office Action dated June 6, 2005, the Examiner obviously did not respond to the concerns raised by the applicant regarding claims 16-18 and 20 at the bottom of page 11 and top of page 12 of the response filed February 1, 2005, and kept the same rejections without even showing the applicant where the claimed limitations are disclosed or suggested in the prior art document, namely Oetiker (US Pat. 5,299,344).

More specifically, applicant respectfully submits that the Examiner has not established a *prima facie* case of obviousness. As held in *re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991), to establish a *prima facie* case of obviousness, three basic criteria must be met:

- a) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings;
- b) there must be a reasonable expectation of success; and
- c) the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.

As held in *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985), to support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references. Accordingly, the initial burden is on the Examiner to provide some suggestion of the desirability of doing what the

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inventor has done. Further, in determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983); *Schenck v. Nortron Corp.*, 713 F.2d 782, 218 USPQ 698 (Fed. Cir. 1983). In addition, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination, see *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). (Emphasis added)

Applicant respectfully submits that the Examiner has not established a *prima facie* case of obviousness for the following reason:

- the prior art reference (or references when combined, namely US Patent Nos. 5,299,344 & 2,659,954) must teach or suggest all the claim limitations; which is not the case for claims 16-18 and 20 as highlighted in response filed February 1, 2005, and repeated hereinbelow. The same argument being applicable to **pending claim 22** claiming limitations not disclosed or even suggest in the prior art references.

In summary, Examiner did not show that the combined prior art references teach all the claimed limitations, and therefore no reasonable expectation of success of the combination can be derived therefrom.

Based on the above, applicant respectfully requests that the finality of the instant application be withdrawn and that prosecution be reopened by the Examiner.

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The abstract of the disclosure and the disclosure have been revised and amended to conform the same to the amended claims and to obviate the objection raised by the Examiner under 35 U.S.C. 132(a). No new subject matter has been added.

The claims have been amended to better clarify the present invention to overcome the Examiner's rejections under 35 U.S.C. 103(a), 112, first and second paragraphs and to improve the idiom. No new subject matter has been added.

Rejections under 35 U.S.C. 112

Reconsideration of rejection of claim 23 under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement by containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention ("the disc spring being made out of stainless steel material") is respectfully requested for the following reason.

Although the description as originally filed does not specifically specify that the disc springs are made out of stainless steel, it is fully implicitly disclosed. In fact, in page 2, lines 28-30 of the disclosure, it is stated that "the hose clamp of the present invention is simple to operate and is manufactured from inexpensive, lightweight and readily available materials, such as stainless steel"; and in page 6, line 32 to page 7, line 2, it is mentioned that the hose "clamp 10 includes a clamp loop 12, two moveable looped ends 14 and 16, a force generator 18, a separator or spacer member 20, a plurality of disc springs 22, and a hingeable

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plate 24". Accordingly, it is implicit that in one embodiment the disc springs 22 are made out of stainless steel material, and this is not new subject matter.

Consequently, the subject matter of pending claim 23 is respectfully believed to be inferred from the description as originally filed.

Reconsideration of rejection of claims 22 and 24 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention is respectfully requested for the following reason.

Pending claim 22 has been amended to clearly state that the plate 24 is hingeably connected to the first looped end for allowing insertion of the clamp around the hose passing through a gap located in between the first and second looped ends and to be positionable in a continuous relationship with the loop once the clamp is disposed around the hose, thereby substantially closing off the gap between the first and second looped ends; as described in the paragraph bridging pages 10 and 11 of the description as originally filed and shown in Figures 1, 2 and 8.

Rejection under 35 U.S.C. 103(a)

Reconsideration of the rejections of claims 1-12 and 16-23 under 35 U.S.C. 103(a) as being unpatentable over Oetiker (US Pat. 5,299,344) in view of Woolsey (US Pat. 2,659,954) is respectfully requested for the following reasons.

Re claim 1: The present invention refers to a heavy-duty (see page 2, lines 15-28; page 5, line 6; page 7, lines 4-9; and page 10, lines 13-24 of the disclosure)

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clamp for a hose that includes a loop for disposing around the hose and having first and second axially spaced apart looped ends. The clamp comprises a force generator, for drawing together the first and second looped ends, and connected to the first and second looped ends. The force generator includes at least one disc spring mounted thereon and made out of corrosion resistant (such as stainless steel) material (see page 2, lines 9-11 & 28-30 of the disclosure) so as to allow substantially high and constant clamping force (see page 2, lines 15-28; page 10, lines 9-24 of the disclosure) from the force generator under circumferential expansion and contraction of the hose over temperature operational condition (wide range of temperature and humidity; see page 1, line 18; page 2, line 7 and page 10, lines 9-20 of the disclosure) of the hose and the clamp (see page 1, line 12 - page 3, line 2; and page 10, lines 9-13 of the disclosure) and humidity operational condition over time (see page 2, lines 9-11 of the disclosure). The clamp further comprises a spacer member mounted on the force generator between the disc spring and the first looped end for axially transferring the clamping force from the force generator to the first and second looped ends, the clamping force axially drawing together the first and second looped ends so as to clamp the hose. (Emphasis added)

Oetiker teaches a hose clamp having a band with two loop ends, and a force generator (screw member) to draw together the two loop ends. A retightening spring (44) is mounted between a cylindrical sleeve (41) and the screw head (43) to provide automatic retightening. Oetiker does not mention or suggest any consideration or need of a generally constant clamping force over temperature variations. Similarly, Oetiker does not mention or suggest any problem or concern related to corrosion of the spring over time that could affect the properties of the spring and therefore the clamping force exerted by the clamp (20) to the hose, and consequently any need of corrosion resistant material for the spring. Although Oetiker specifically mentions that the band (21) and the gap reinforcing part (80) (and not the spring or any other part) could be made out of

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galvanized steel or stainless steel (see col. 4, lines 22-25, and col. 6, lines 26-30). In fact, nowhere in Oetiker's specification there is mention of any spring material. Consequently, the applicant respectfully disagrees with the Examiner saying that "the applicant clearly identifies in applicant's arguments the Oetiker's disc being made out of stainless steel material"; how that can be since it is not the case at all! Furthermore, Oetiker's clamp is typically made for use with hoses carrying a medium that generates significant forces, and those are typically known in the art to undergo maximum clamping torque being in the range of about 15 in-lbs, not comparable to the high hoop torque range (up to 450 in-lbs) reachable with the heavy-duty clamp of the present invention. (Emphasis added)

On the other hand, Woolsey teaches a band coupling for pipes (not hoses), especially suited for V-band type couplings of flanged pipes such as jet engine exhaust pipes (see col.4, lines 44-49), having a disc-type spring (Belleville spring washers) to ensure a substantially constant loading, with substantially zero deflection rate, onto the coupling of two pipes subjected to extreme high temperature variation during operation thereof (see col.4, lines 44-71), which could not be provided by coil-type springs (see col.5, lines 43-54, Fig.6), the latter being simply unsuitable (col.1, lines 38-50; col.5, lines 72-74). Furthermore, in Woolsey's coupling, the axial clamping pressure at the flanges is mainly generated (amplified) by the angle of the frusto-conical side walls of the flanges as opposed to being generated directly by the clamping bolts which therefore need not to draw large hoop tensions to simply retain the coupling in place (see col.4, lines 28-43). Furthermore, the coupling of Woolsey is not suitable for high hoop torque range applications, especially using substantially flat bands (as opposed to V-bands), since the gap created between the two coupling attachment ends would prevent a uniform clamping pressure all around the pipe and therefore allows leakage there from. Also, nowhere Woolsey discloses any concern related to the need of corrosion resistant material for the disc springs, although the use of stainless steel-tungsten alloys is mentioned

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because of the retention of their relatively high resiliency characteristic even after prolonged periods of heating at temperatures in excess of 500°F (see col.5, lines 55-67); at which temperature level humidity is generally not of a concern. (Emphasis added)

In fact, anyone knowledgeable in the art of materials would know that a corrosion resistant coil spring, including stainless steel (soft steel material) coil spring, to provide an equivalent elastic force to that of a standard steel coil spring, would need to be many times larger in size (as large as the hose diameter it clamps onto), which would not be practical and cumbersome for use as a clamp fastening means. Accordingly, there were no such heavy-duty corrosion resistant hose clamps on the market before the applicant came out with the present invention.

To render the heavy-duty (high hoop torque range) hose clamps corrosion resistant while maintaining a substantially practical and reasonable size, the applicants came out with the idea of using force generator comprised of disc shape springs made out of corrosion resistant material; the disc springs further providing a substantially constant torque over temperature excursions and high operating humidity levels, characteristics not available with the coil-type springs.

Accordingly, it is respectfully believed that it would not have been obvious at all to one having ordinary skill in the art at the time Applicant's invention was made to use a disc spring as taught by Woolsey for use with a coupling on aircraft flanged exhaust pipes with the clamp of Oetiker to get a heavy-duty corrosion resistant hose clamp of the present invention since there is no suggestion or motivation in any of the references (especially Oetiker and Woolsey that could eventually be considered to be analogous art as being both in the field of endeavor of band clamps for hoses and pipes) for a corrosion resistant clamp, and furthermore there is no suggestion for desirability of doing such combination,

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Woolsey disclosing a low torque V-band coupling for pipes with disc springs and Oetiker disclosing a low torque flat band clamp with coil spring; two different devices for two different uses, and both uses being different than the use of the present invention device formed from a combination with completely new and useful characteristics not disclosed in any of the references. (Emphasis added) It is reminded that any suggestion or motivation of combination however constitutes a prerequisite for a combination rejection as stated by the Patent Office Board of Appeal in its decision ex parte Walker 135 USPQ 195:

"In order to justify combination of references it is necessary not only that it be physically possible to combine them, but that the art should contain something to suggest the desirability of doing so."

The Court of Customs and Patent Appeal subscribes to the Board's reasoning when it handed down its decision in the case in re Inperato, 179 USPQ, 730 holding:

"The fact that the disclosures of references can be combined does not make combination obvious unless the art also contains something to suggest the desirability of such combination."

Re claims 2-12 and 16-23: Amended dependent claims 2-12, and 16-23 are respectfully believed to patentably distinguish the invention over the prior art cited by the Examiner for the similar reasons set out above with respect to claim 1 since they depend thereon.

More particularly:

Re claims 16, 17, 18, 20 and 22: As discussed hereinabove, the applicant respectfully submits that the Examiner is erroneous when stating that Oetiker discloses respectively:

- the second bolt end including a stop (Oetiker only discloses that the

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last threads of the threaded shank portion near its free end are deformed after being screwed through the band-tightening member so that the screw-type tightening device can now be opened up more fully without danger of undesired disassembly by unscrewing the screw member...(see col.8, line 65 - col.9, line 9); which does not damp to prevent unscrewing under major vibrations during operation);

- the stop being a lock nut, a Stover nut or a nylon insert nut;
- the Stover nut or the nylon insert nut being integral with the stem portion of the second capture nut;
- the clamp loop, when viewed in cross section, including a planar portion and two ends that are angled away from the surface of the hose; and
- the plate being hingeably connected to the first looped end.

Nowhere the above characteristics are disclosed or suggested by Oetiker.
(Emphasis added)

Re claim 22: Dependent claim 22 has been amended to better claim the plate.

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With respect to the election/restriction, the applicant respectfully states, again, that claims 1, 2, 19, and 21-24 appear generic to all four species since all the limitations of these respective claims are present in all four species. Accordingly, these claims do not make any distinction upon the facts that the clamp includes more than one capture nut and that the clamp includes more than two looped ends (first and second looped ends). The fact that the loop disposed around the hose could be broken down in two (as shown in Figures 10 & 11, although more than two pieces could also be considered) segments attached to one another with a second force generator or the like between the additional two (third and fourth) looped ends is irrelevant, as long as the claimed features are present. Having more than one force generator simply increases and makes more uniform the holding pressure of the clamp around the hose, especially for large diameter hose applications. (Emphasis added)

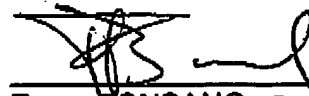
Claims 1-12 and 16-24 should be found, as now amended, clearly allowable over the art cited by the Examiner.

Based on the above, it is believed that the present application is now in condition for allowance and a favorable action is solicited.

Respectfully submitted,

Martin COUSINEAU, Applicant

By



Franz BONSANG, Reg.No. 56638

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